

[0030] What we claim is:

1. Apparatus for measuring the uv fluence in a space comprising a spherical containment vessel having a transmissively passive spherical wall containing an actinometric fluid therewithin that is optically opaque at a known wavelength.
- 5 2. An apparatus as defined in claim 1 wherein said actinometric solution comprises a an aqueous solution of 0.6 *M* iodide and 0.1 *M* iodate in 0.01 *M* borate at pH 9.25.
3. An apparatus as defined in claim 1 wherein said actinometric solution is an aqueous mixture of iodide and iodate that is optically opaque at 254 nm but insensitive to radiation above 330 nm.
- 10 4. Apparatus as defined in claim 1 wherein said spherical containment vessel is made from quartz.
5. Apparatus as defined in claim 1 wherein said spherical containment vessel has a volume of less than about 1 cubic centimeter.
- 15 6. Apparatus as defined in claim 1 wherein said actinometric solution comprises a an aqueous solution having a molar concentration of iodide and iodate of about 3:5 and a ph of about 9.25.
7. An apparatus as defined in claim 1 comprising a colorimeter operatively configured to measure absorbance of light passing through said spherical actinometer for a determination of UV fluence.
- 20 8. Apparatus as defined in claim 7 further comprising a plurality of said spherical actionometers dispersed within a volume for determination of uv fluence within the volume.
9. Apparatus as defined in claim 1 wherein said actinometer has neutral buoyancy relative to water for dispersion in a volume of water for measuring fluence throughout the volume.

